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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PATEL, JAYESH A	

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
05/06/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,682	MAACK, HANNS-INGO	
	Examiner	Art Unit	
	JAYESH A. PATEL	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/10/2009 has been entered. Applicant acknowledges that Chan discusses engineering considerations in designing array sensors with respect to sub-arrays, binning and read out, however does not enable the imaging device for presetting the parameter on pages 7-8 of the remarks, the examiner disagrees. First of all presetting and resetting would be within one of ordinary skill in the art and Chan at **Col 37 lines 1-16** where the operational mode of the CCD is dictated by the components of the camera and the host computer which are the parameters (binning with 4X4 of the sub-regions) meeting the claim limitations. Also Chan further discloses the parameters at Col 37 lines 33-35 where "temporal resolution" is the parameter related to the pixels or sub-regions as resolution in the camera always deals with the pixels and its size.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Booysen et al. (US 6921200) hereafter Booysen in view of Aizaki et al. (US 20030016301) hereafter Aizaki.

1. Regarding claim 1, Booysen discloses a method of operating an imaging device **(Figs 7 -10)** with a two-dimensional field of image sensors **(the CCD consisting of rows and columns at Col 7 lines 20-22)** as well as an evaluation unit which is capable of reading out and processing the pixel signals **(front end processor 126 and the image pre processor at col 7 lines 54-59)**, representing output signals of image sensors combined by a binning operation **(2X2 binned pixel at Col 7 lines 65-66)**, at a maximum rate of no more than Gmax **(the data transfer rate of 147 Mbits per second which is the rate determined by the smallest binned super pixel 2X2 and therefore is the qty of data (less than some Gmax data rate) at Col 63-67 between the front end processor and the image pre-processor)**. Booysen discloses that the system may be designed in such a way that the binning can occur flexibly at **Col 7 lines 49-53** which ideally will be presetting and changing the binning parameter, however for the purpose of exact claim words of "setting" Aizaki discloses in the system where the camera having presetting, on said imaging device , at least one parameter in order to define a sub-region of the field **(para 0044 where the**

binning number setter 46 is setting the binning parameter, also seen in Figs 4A and 4B); and deriving, by said imaging device, any remaining parameters for defining the sub-region as well as a binning factor b and an imaging rate f **(the controller obtains the maximum binning number at para 0065 which is optimum parameter)** binning number of , said deriving being performed, in view of the at least one preset parameter **(the controller outputs the binning number to the binning setter 46 at para 0065 and 0067 as the binning number is changed from the previously set binning number)** in such a manner that the maximum rate Gmax of the evaluation unit is not exceeded **(minimum pieces of data in the range at para 66)** during the reading out of all pixel signals from the sub-region. Aizaki discloses in setting of the binning number at **para 0057** and further discloses in **paras 0065-0067** where the optimum binning number is set such that the minimum data is transferred in the range **(not exceeding the Gmax)** meets the claim limitation of presetting and deriving to a another parameter (optimum binning) without exceeding the data. Aizaki also discloses that various parameters can be set and changed in the camera in **paras 0090-0093**. Aizaki discloses the system in which the camera can be set for the optimum setting at **paras 0006-0007**. Aizaki and Booysen are from the same field of endevour and are analogous art **(binning and image processing)**, therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Aizaki in the method and system of Booysen for the above reasons.

2. Regarding claim 2, Booysen and Aizaki disclose the method as claimed in claim 1. Booysen at **(Col 7 lines 34-40 where two by two pixels are discloses representing a rectangular array)** discloses characterized in that the image sensors are arranged in a periodic pattern in a rectangular field, the sub-region having a rectangular shape with its sides extending parallel to the edges of the field. Aizaki also discloses in **Figs 4A-4B** the rectangular array of pixels meeting the claim limitations.

3. Regarding claim 3, Booysen and Aizaki disclose the method as claimed in claim 1. Booysen discloses characterized in that the image sensors are X-ray sensors **(Col 5 lines 63-64 where the X-rays strike the camera with CCD therefore the image sensors are x-Ray sensors or sensing x-rays)**.

4. Regarding claim 4 see the explanation of claim 1. Booysen further discloses controller controlling different modes of the processor and also serves as a built in test mode at **(Col 8 lines 5-10 and 18-20)** which meets the limitations of the service mode of the imaging device.

5. Regarding claim 5, Booysen and Aizaki discloses the method as claimed in claim 1. Aizaki discloses the changing of the binning parameter to the optimum

binning parameter such that the minimum data transfer occurs as explained in claim 1 and therefore the rate does not exceed the maximum rate of Gmax.

6. Regarding claim 6 see the explanation of claim 1. Booysen discloses further characterized in that the evaluation of the pixel signals is performed by means of calibration images **(Fig 16 Calibration start and end which shows the calibration images are captured)** related to the sub-region.

7. Regarding claim 8 , Booysen and Aizaki disclose the method as claimed in claim 6. Booysen discloses further characterized in that dark images of the sub-region are generated **(Fig 16 where the dark values with respect to the pixels are generated)** and used as calibration images.

8. Claim 9 is a corresponding imaging device claim of claim 1. See the explanation of claim 1.

9. Regarding claim 10 see the explanation of claim 1. Booysen discloses further characterized in that the imaging device comprises an X-ray apparatus with an adjustable diaphragm arrangement in the beam path **(Figs 2 and 5 and Col 4 lines 38-40 where the apparatus is disclosed)**, at least one adjustment parameter of the diaphragm device being **(X-ray beam width controller adjusts the diaphragm so the amount of x-rays enter the patients body at Col 4**

lines 59-67) presettable while any remaining adjustment parameters are automatically set **(other parameters are automatically set at Col 5 lines 53-56)**.

10. Regarding claim 11, Booysen and Aizaki discloses the method as claimed in claim 1. Aizaki discloses the parameters as seen in claim 1 and also as seen in **(para 0044 , Paras 0065- 0067 where binning setter parameters and optimum binning setting parameters are other parameters disclosed)** wherein said any remaining parameters amount to one or more parameters.

11. Regarding claim 12, Booysen and Aizaki disclose the method as claimed in claim 4. Booysen further discloses controller controlling different modes of the processor and also serves as a built in test mode at **(Col 8 lines 5-10 and 18-20)** which meets the limitations of wherein said operating, including the defining in said such a manner, occurs in a mode distinct from said service mode.

12. Regarding claim 13, Booysen and Aizaki disclose the method as claimed in claim 1. Booysen discloses the binning factor and data rate at (Col 7 lines 34-40 and 54-67) and Aizaki discloses the binning factor and the minimum data transferred at (paras 0065-0067) which meets the claim limitations of claim 13.

13. Claim 14 is a corresponding device claim of claim 13. See the explanation of claim 13.

Claim 7is rejected under 35 U.S.C. 103(a) as being unpatentable over Booysen in view of Aizaki and in further view of Jalink et al. (US 5844242) hereafter Jalink.

14. Regarding claim 7, Booysen and Aizaki disclose the method as claimed in claim 6. Booysen disclose the calibration images taken using the dark image signals as seen in **fig 16**, however is silent and does not expressly recite characterized in that sub-regions are selected which cover the entire field of the image sensors; for each of the sub-regions related calibration images are generated with predetermined imaging parameters; from the calibration images of the sub-regions there are generated overall calibration images for the imaging parameters which are related to the entire field of image sensors; calibration images for an arbitrary new sub-region are acquired from the overall calibration images.

Jalink discloses the capturing of the dark current images **(calibration or reference image)** and further disclose the integration all CCD arrays under dark conditions **(overall calibrated image is generated)** and repeating the steps with the different sub-image data at **(Col 7 lines 1-67 through Col 8 lines 67)**. The system and method as disclosed by Jalink produces the correction data array

and for all subsequent testing the images are normalized with the correction data at giving accurate results each time **(Col 7 lines 1-8)**. Booysen, Aizaki and Jalink are from the same field of endeavor and are analogous art therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Jalink in the method and system of Booysen and Aizaki for the above reasons.

Other Cited Prior art

NPL's from Ion imaging system software and Universal imaging disclosing **defining data acquisition settings** such as binning etc. (US 20040012689), (US 5686960), (US 7065177) and IEEE 0-7803-7324-3.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAYESH A. PATEL whose telephone number is (571)270-1227. The examiner can normally be reached on M-F 7.00am to 4.30 pm (5-4-9). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

04/17/2009
/Jayesh A Patel/
Examiner, Art Unit 2624

/Brian P. Werner/
Supervisory Patent Examiner, Art Unit 2624